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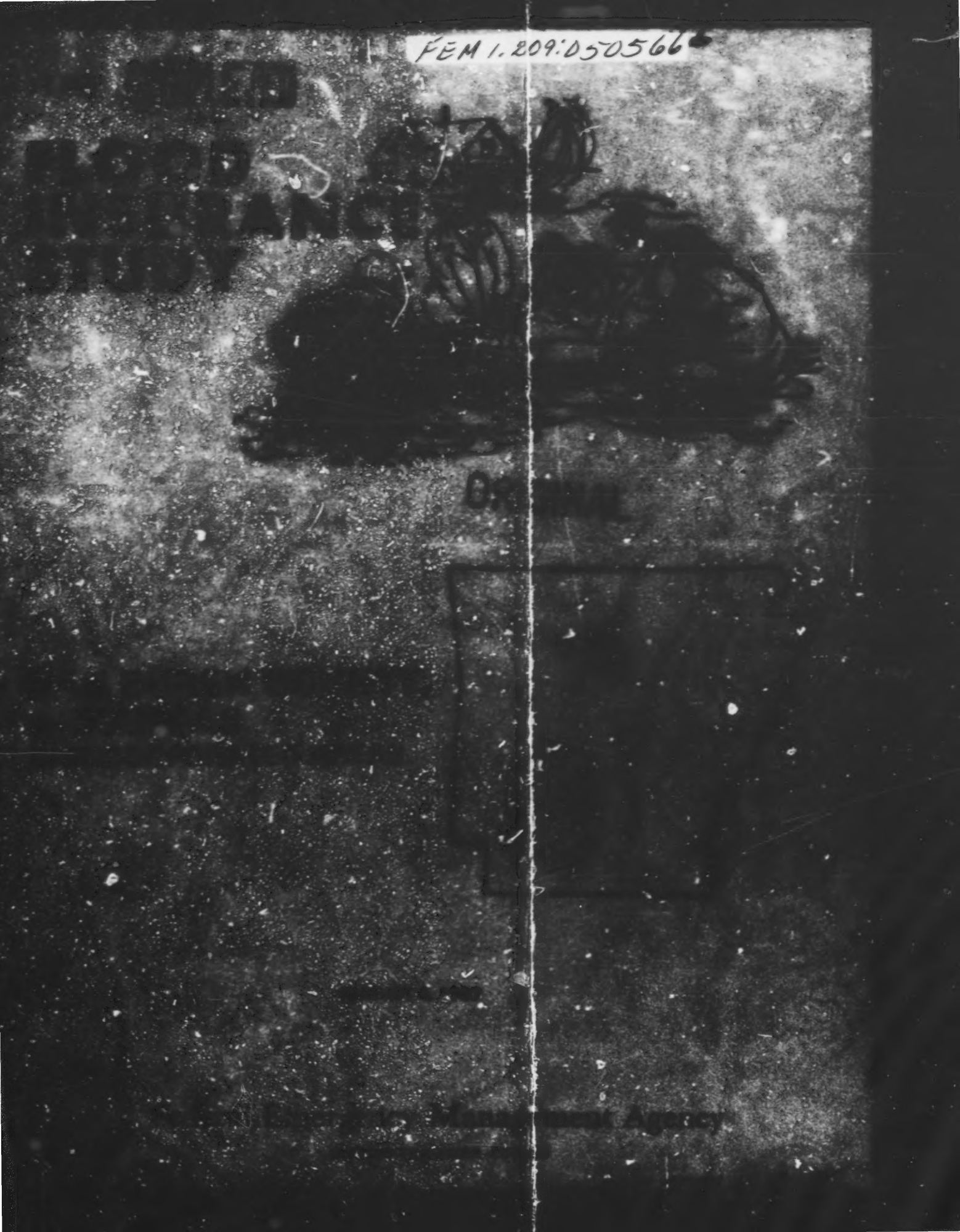

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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Exhibit 2 - Flood Insurance Rate Map Index and Street Index
Flood Insurance Rate Map

Exhibit 3 - Elevation Reference Marks

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FLOOD INSURANCE STUDY
UNINCORPORATED AREAS OF VAN BUREN COUNTY, ARKANSAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the unincorporated areas of Van Buren County, Arkansas, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were prepared by the Little Rock District of the U. S. Army Corps of Engineers (COE) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-84-1506, Project Order No. 1, Amendment No. 7. This work was completed in May 1985.

1.3 Coordination

On July 21, 1983, an initial Consultation and Coordination Officer's (CCO) meeting was held to determine the streams to be studied by detailed methods. This meeting was attended by FEMA, the county, and the Little Rock District of the COE (the study contractor). Van Buren County and the City of Clinton were contacted for information pertinent to the study. On August 12, 1986, a final CCO meeting was held with FEMA, the county, and the study contractor to review the results of the study.

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2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated area of Van Buren County, Arkansas. The City of Clinton and the Town of Shirley are not included in this study. The area of study is shown on the Vicinity Map (Figure 1).

The following streams were studied by detailed methods within the community:

Stream	From River Mile	To River Mile
Middle Fork Little Red River	4.45	9.05
South Fork Little Red River	26.90	29.08
Choctaw Creek	1.06	5.45
Weaver Creek	0.00	2.77
Scotland Branch	0.76	1.98
Scroggins Creek	0.77	5.48
East Fork Point Remove Creek	3.86	6.20
Beardy Branch	1.02	1.89
Big Branch	0.62	1.74
Joneed Creek	0.00	0.31
Beardy Branch Tributary	0.00	0.60

The stream distances for this study are measured in river miles instead of actual miles. River miles identify known locations along the streams in Van Buren County; actual measured miles along the channel may not correspond to given river miles. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction through May 1990.

The following streams were studied by approximate methods: Greers Ferry Lake, North Fork Cadron, Pine Mountain Creek, Archey Creek Fork, and the remaining portions of the Middle Fork Little Red River, the South Fork Little Red River, and Choctaw Creek. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and Van Buren County.

2.2 Community Description

Van Buren County is located in the north-central portion of Arkansas, approximately 70 miles north of Little Rock. It is bordered by the City of Searcy and the unincorporated areas of Stone County to the north, the

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APPROXIMATE SCALE
0 4 8 12 MILES

VICINITY MAP

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR
(UNINCORPORATED AREAS)

FIGURE 1

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unincorporated areas of Cleburne County to the east, the City of Conway and the unincorporated areas of Faulkner County to the south, and the unincorporated areas of Pope County to the west.

Van Buren County is primarily a rural agricultural and forest area with limited industrial and residential development. The largest area of concentrated population is the City of Clinton. A portion of the county is part of the Ozark National Forest. The upper portion of Greers Ferry Lake extends into the eastern area of the county. Several streams, including the Middle Fork Little Red River, the South Fork Little Red River, Choctaw Creek, and Big Branch, drain into Greers Ferry Lake and are affected by backwater from the lake. The topography of the area is rolling to steep hills covered with hardwood forests and secondary undergrowth.

The climate of the county is humid with variable temperature and an average annual temperature of 59 degrees Fahrenheit (°F). Summers are moderately long and hot, and daily maximum temperatures occasionally exceed 100°F. Winters are moderately short and cold. The average annual precipitation for the area is approximately 50 inches. Precipitation is fairly uniformly distributed throughout the year, with heavier amounts occurring in the spring and lesser amounts occurring in the summer. Intense thunderstorms do occur in the summer and may release large amounts of rain over a small area in a short period of time. Snowfall is light with the area receiving approximately 9 inches annually (Reference 1).

2.3 Principal Flood Problems

Eight rainfall gages were in operation in the Clinton area during the December 1982 flood of record. Seven of these gages are read daily with the other an hourly recording gage. The total maximum recorded rainfall for the December 1982 storm was 13.8 inches. This resulted in a flood along the South Fork Little Red River and Archey Creek Fork with an estimated recurrence interval of 100 years.

The storm of March 1977 produced a maximum recorded rainfall of 8.1 inches. The recurrence interval of this flood was estimated to be approximately 10 years. A storm in August 1957 had a maximum recorded rainfall of 10.3 inches with a recurrence interval of approximately 40 years.

There is a U. S. Geological Survey (USGS) stream gage located on the Middle Fork Little Red River at Shirley, Arkansas. Two gages are located on the South Fork Little Red River. One of these gages is a discontinued gage with a period of record from 1939 to 1961. The second gage is

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located on the upstream side of the U. S. Route 65 bridge with a period of record from 1962 to the present. Since the gage was lost in the December 1982 flood, high-water marks were used in the analysis of this flood.

2.4 Flood Protection Measures

The upstream portions of the watersheds of the streams in the county are continuing to develop. The area will require floodplain management to avoid flood damages since increased runoff will occur. The county's participation in the Flood Insurance Program is the only floodplain management tool used by the county.

Backwater from the Greers Ferry Lake dam extends into the eastern portion of Van Buren County.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the community.

For the streams studied by detailed methods, the 10-, 50-, 100-, and 500-year frequency discharges were developed using the COE HEC-1 Flood Hydrograph Package (Reference 2).

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A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
MIDDLE FORK LITTLE RED RIVER					
At State Route 9	294	51,360	103,540	132,500	217,800
SOUTH FORK LITTLE RED RIVER					
At U. S. Route 65	145	29,800	50,800	61,700	95,000
CHOCTAW CREEK					
At confluence with Big Branch	30.7	20,767	28,180	31,377	37,507
WEAVER CREEK					
At State Route 16	28.7	12,739	17,458	19,504	23,198
SCOTLAND BRANCH					
At confluence with South Fork Little Red River	11.3	43,150	56,150	61,700	73,450
SCROGGINS CREEK					
At confluence with North Fork Cadron Creek	9.2	6,978	9,517	10,793	13,310
EAST FORK POINT REMOVE CREEK					
Approximately 2.45 miles above Van Buren-Conway county boundary	8.5	9,383	12,375	13,673	16,318
BEARDY BRANCH					
Approximately 0.74 mile above confluence with West Fork Point Remove Creek	4.7	5,353	6,921	7,670	9,191
BIG BRANCH					
At confluence with Choctaw Creek	4.1	5,191	6,868	7,618	9,072

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TABLE 1 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
JONEED CREEK					
At confluence with Scotland Branch	1.5	15,134	19,655	21,643	25,653
BEARDY BRANCH TRIBUTARY					
At confluence with Beardy Branch	0.5	1,186	1,530	1,674	1,958

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross sections for the streams studied by detailed methods were field surveyed. Cross sections were located above and below bridges to compute the significant backwater effects of those structures.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the Flood Insurance Rate Map (Exhibit 2).

Water-surface elevations of floods of the selected recurrence intervals were computed using the COE HEC-2 step-backwater computer program (Reference 3). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

The starting water-surface elevations for the South Fork Little Red River Joneed Creek, and Beardy Branch Tributary were determined using known water-surface elevations. For the remaining streams studied by detailed methods, the starting water-surface elevations were computed by the slope/area method.

Roughness factors (Manning's "n") used in the hydraulic computations were obtained by engineering judgment and based on field investigations of the stream and overbank floodplain areas. The channel "n" and overbank "n" values for the streams studied by detailed methods are shown in the following tabulation:

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Stream	Channel "n"	Overbank "n"
Middle Fork Little Red River	0.048-0.060	0.120
South Fork Little Red River	0.075	0.110
Choctaw Creek	0.049	0.120-0.150
Weaver Creek	0.048-0.060	0.120
Scotland Branch	0.035-0.070	0.120
Scroggins Creek	0.013-0.051	0.070-0.130
East Fork Point Remove Creek	0.015-0.060	0.150
Beardy Branch	0.053	0.150
Big Branch	0.013-0.052	0.080-0.150
Joneed Creek	0.070	0.120
Beardy Branch Tributary	0.030-0.053	0.150-0.180

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study are shown on the maps; the descriptions of the marks are presented in Elevation Reference Marks (Exhibit 3).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the streams studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 20 feet (Reference 4).

The flooding sources studied by approximate methods were delineated using topographic maps (Reference 4).

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The 100- and 500-year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary is shown on the Flood Insurance Rate Map (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 2). The computed floodways are shown on the Flood Insurance Rate Map (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown. Portions of the floodway widths for the Middle Fork Little Red River and the South Fork Little Red River extend beyond the corporate limits.

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Middle Fork Little Red River								
A	5.04[1]	2,269	42,782	3.1	521.8	521.8	522.8	1.0
B	5.73[1]	2036/1620[5]	28,509	4.6	523.8	523.8	524.8	1.0
South Fork Little Red River								
A	27.217[2]	928/740[5]	19,275	3.2	536.1	536.1	537.1	1.0
B	28.062[2]	2,584	42,386	1.5	538.0	538.0	538.9	0.9
C	28.626[2]	2,958	36,729	1.7	538.9	538.9	539.8	0.9
Choctaw Creek								
A	1.090[3]	1,417	15,259	2.1	495.2	495.2	495.9	0.7
B	2.070[3]	436	4,679	6.3	506.8	506.8	507.6	0.8
C	2.630[3]	750	5,959	3.5	516.9	516.9	517.9	1.0
D	3.690[3]	369	4,061	5.2	531.1	531.1	532.0	0.9
E	4.070[3]	515	3,902	4.0	556.3	556.3	557.3	1.0
F	4.380[3]	365	2,131	7.3	564.2	564.2	564.2	0.0
G	5.130[3]	179	2,753	5.7	601.8	601.8	601.8	0.0
H	5.450[3]	103	915	17.1	613.9	613.9	614.3	0.4
Weaver Creek								
A	2.775[4]	200	1,029	7.6	552.1	552.1	552.1	0.0

[1]River miles above county boundary
[2]River miles above confluence with Greers Ferry Lake
[3]River miles above confluence with Big Branch
[4]River miles above confluence with Middle Fork Little Red River
[5]Width/width within county boundary

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

MIDDLE FORK LITTLE RED RIVER - SOUTH FORK LITTLE RED RIVER - CHOCTAW CREEK - WEAVER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Scotland Branch								
A	0.880[1]	300	2,868	7.5	631.1	631.1	632.1	1.0
B	1.100[1]	302	2,288	9.5	640.9	640.9	641.9	1.0
C	1.380[1]	461	4,087	5.3	652.8	652.8	653.8	1.0
D	1.730[1]	600	5,724	3.8	669.0	669.0	670.0	1.0
E	1.970[1]	250	2,177	9.9	684.3	684.3	684.5	0.2
Scroggins Creek								
A	3.35[2]	328	2,359	4.4	716.1	716.1	717.1	1.0
B	3.91[2]	564	4,964	2.1	723.9	723.9	724.9	1.0
C	5.48[2]	60	475	14.9	779.1	779.1	779.8	0.7
East Fork Point Remove Creek								
A	4.36[3]	210	817	6.4	743.3	743.3	744.3	1.0
B	5.53[3]	123	796	5.2	834.3	834.3	834.9	0.6
C	6.20[3]	190	934	2.8	878.4	878.4	879.4	1.0
Beardy Branch								
A	1.06[4]	282	1,461	5.2	664.8	664.8	665.8	1.0
B	1.89[4]	94	549	6.3	713.5	713.5	714.3	0.8

[1]River miles above confluence with South Fork Little Red River
[2]River miles above confluence with North Fork Cadron Creek
[3]River miles above county boundary
[4]River miles above confluence with West Fork Point Remove Creek

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

SCOTLAND BRANCH - SCROGGINS CREEK - EAST FORK POINT REMOVE CREEK - BEARDY BRANCH

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Big Branch								
A	1.10[1]	260	1,635	5.1	519.0	519.0	520.0	1.0
B	1.39[1]	116	1,031	4.2	538.2	538.2	538.7	0.5
Joneed Creek								
A	0.305[2]	312	2,652	8.2	687.8	687.8	688.8	1.0
Beardy Branch Tributary								
A	0.190[3]	50	208	8.0	725.0	725.0	726.0	1.0
B	0.595[3]	65	304	4.7	767.8	767.8	768.8	1.0

[1]River miles above confluence with Choctaw Creek
[2]River miles above confluence with Scotland Branch
[3]River miles above confluence with Beardy Branch

TABLE 2

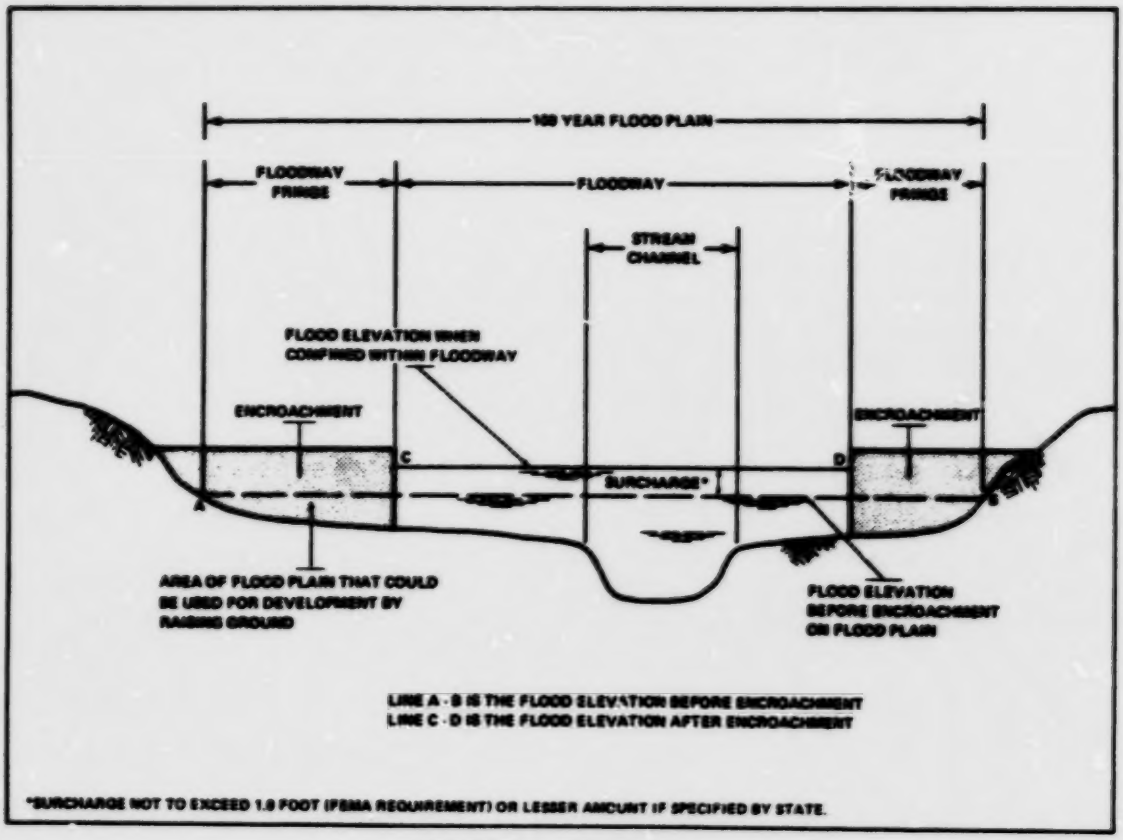
FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

BIG BRANCH - JONEED CREEK - BEARDY BRANCH TRIBUTARY

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FLOODWAY SCHEMATIC Figure 2

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

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Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

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Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

7.0 OTHER STUDIES

Flood Insurance Studies for the City of Clinton and the unincorporated areas of Stone County are currently being prepared (References 5 and 6). The results of those studies will be in complete agreement with the results of this study.

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8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Natural and Technological Hazards Division, Federal Regional Center, 800 North Loop 288, Denton, Texas 76201.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U. S. Department of Commerce, Weather Bureau, Technical Paper No. 40, Rainfall Frequency Atlas of the United States, Washington, D. C., 1961, Revised 1963.

2. U. S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-1 Flood Hydrograph Package, Davis, California, July 1982.

3. U. S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, Davis, California, March 1982.

4. U. S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 Feet: Alread, Arkansas, 1965; Bee Branch, Arkansas, Photorevised 1975; Botkinburg, Arkansas, 1965; Canaan, Arkansas, 1962; Cleveland, Arkansas, 1962; Clinton, Arkansas, Photorevised 1981; Damascus, Arkansas, 1961; Fairfield, Arkansas, Photorevised 1981; Formoso, Arkansas, 1962; Greers Ferry, Arkansas, Photorevised 1981; Guy, Arkansas, 1961; Jerusalem, Arkansas, 1962; Leslie, Arkansas, 1963; Morgantown, Arkansas, Photorevised 1975; Old Lexington, Arkansas, 1973; Oxley, Arkansas, 1973; Parma, Arkansas, 1973; Quitman, Arkansas, Photorevised 1975; Rex, Arkansas, 1965; Scotland, Arkansas, 1965; Shirley, Arkansas, 1973; Lost Corner, Arkansas, 1980; Tilly, Arkansas, 1980.

5. Federal Emergency Management Agency, Flood Insurance Study, City of Clinton, Van Buren County, Arkansas (Unpublished).

6. Federal Emergency Management Agency, Flood Insurance Study, Unincorporated Areas of Stone County, Arkansas (Unpublished).

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ELEVATION REFERENCE MARKS
VAN BUREN COUNTY, ARKANSAS

Reference Mark	FIRM Panel	Elevation (Feet (NGVD)	Description of Location
RM1	95	597.78	Chiseled square in south end of 24-inch circular concrete culvert, 14.3 feet south of center of State Route 95, approximately 0.97 mile west along State Route 95 from courthouse at Clinton. NW1/4, Section 15, T.11N., R.14W.
RM2	95	640.96	Chiseled square in south end of a 24-inch circular concrete culvert, 13.8 feet south of State Route 95, about 700 feet southwest of transmission line, approximately 1.8 miles west along State Route 95 from courthouse in Clinton. SW1/4, Section 16, T.11N., R.14W.
RM3	95	567.083	Standard tablet stamped 29 FDR 1963 567, set in concrete post, approximately 152 feet northeast of the center of State Route 95 at three 48-inch circular concrete culverts, approxi-mately 2.9 miles west along State Route 95 from the Clinton courthouse, SW1/4, Section 17, T.11N., R.14W.
RM4	110	555.373	Standard disk stamped L7 1931, set in concrete post, approximately 2.7 miles north of State Route 9 along River Road, approximately 40 feet east of road, 55 feet north of pole 212+11, NE1/4, Section 18, T.12N., R.12W.
RM5	110	684.572	Standard disk stamped 684.572 J 18 1932, set in top of concrete post, 51.8 feet west of the centerline of State Route 9, 28.9 feet east of a 16-inch oak tree, southeast corner of Shirley School yard. SW1/4, Section 19, T.12N, R.12W.

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Reference Mark	FIRM Panel	Elevation (Feet (NGVD)	Description of Location
RM6	110	542.269	Standard disk stamped 542.269 M7 1931, set in top of concrete post, 43.4 feet east of the southeast corner of Missouri and Arkansas Railway station in Shirley, 1,100 feet west and 250 feet south of the northeast east corner of Section 25, NE1/4, Section 25, T.12N., R.13W.
RM7	110	534.182	Chiseled square on top of 10" by 10" NE concrete highway post on State Route 9, approximately 900 feet north of State Routes 9 and 16 intersection, NE1/4, Section 25, T.12N., R.13W.
RM8	110	562.284	40 D spike in power pole, 40 feet east of State Route 9, 75 feet north of State Route 16, NE1/4, Section 25, T.12N., R.13W.
RM9	110	531.528	Chiseled square in top of west curb at the center of the State Route 16 and Weaver Creek Bridge, SE1/4, Section 25, T.12N., R.13W.
RM10	110	567.138	Chiseled square in top of south curb on State Route 16 bridge about 580 feet west, 1,030 feet north of southeast corner of Section 26, T.12N., R.13W.
RM11	125	594.904	Standard disk stamped D 36 1934, set in top of concrete post, 26.2 feet south of centerline of State Route 9, 1.4 feet north of fence paralleling highway. About 150 feet east of headwall of concrete culvert under Highway, approximately 0.8 mile west of State Route 16 and 110 intersection along State Route 16, SE1/4, Sectior 26, T.12N., R.13W.
RM12	155	621.52	Boat spike in centerline of State Route 95 approximately 0.9 mile northeast from State Route 95 and Scotland East Road intersection, SE1/4, Section 5, T.10N., R.15W.

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Reference Mark	FIRM Panel	Elevation (Feet (NGVD)	Description of Location
RM13	155	630.12	Boat spike in the centerline of State Route 95 approximately 0.6 mile northeast from the State Route 95 and Scotland East Road intersection, SE1/4, Section 5, T.10N., R.15W.
RM14	155	640.99	Boat spike in centerline of State Route 95 approximately 0.4 mile northeast from State Route 95 and Scotland East Road intersection, SE1/4, Section 5, T.10N., R.15W.
RM15	155	657.28	Boat spike in centerline of State Route 95 approximately 0.2 mile northeast from State Route 95 and Scotland East Road intersection, NW1/4, Section 8, T.10N., R.15W.
RM16	155	660.53	Boat spike in pavement of State Route 389 at Gulf Mountain Road and State Route 389 intersection, NW1/4, Section 8, T.10N., R.15W.
RM17	155	671.07	Chiseled square in center of southeast end of low water bridge crossing Scotland Branch approximately 0.2 mile southwest of State Route 389 and Gulf Mountain Road intersection, SE1/4, Section 7, T.10N., R.15W.
RM18	155	532.42	Boat spike in power pole on the southeast side of Scotland Alread Road, approximately 1.9 miles southwest along Scotland Alread Road from U.S. Route 65 and 9 junction, NE1/4, Section 15, T.10N., R.14W.
RM19	180	546.44	Boat spike in west side of power pole, approximately 550 feet northwest along transmission line from County Road 368, NW1/4, SE1/4, Section 2, T.10N., R.14W.
RM20	180	541.06	Chiseled square in east curb of north end of U.S. Route 65 and Big Branch Bridge, approximately 0.3 mile north along U.S. Route 65 from U.S. Route 65 and State Route 330 junction, SE1/4, Section 2, T.10N., R.14W.

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Reference Mark	FIRM Panel	Elevation (Feet (NGVD)	Description of Location
RM21	180	499.13	Chiseled square in center of headwall on south end of box culvert where State Route 330 crosses Big Branch, approximately 0.5 mile east along State Route 330 from U.S. Route 65 and State Route 330 junction, SW1/4, Section 1, T.10N., R.14W.
RM22	165	709.77	Boat spike in 10" oak post approximately 100 feet normal to county road running north-south from Gravel Hill, approximately 350 feet south of Beardy Branch, SE1/4, NE1/4, Section 25, T.10N., R.16W.
RM23	165	758.16	Boat spike in power pole approximately 450 feet south of "T" intersection of Old Highway 95 and County Road in Gravel Hill, approximately 20 feet west of State Route 95, NE1/4, SE1/4, Section 25, T.10N., R.16W.
RM24	165	760.60	Boat spike in power pole on south side of State Route 95, approximately 1/4 mile east of Gravel Hill, SW1/4, Section 30, T.10N., R.15W.
RM25	170	529.634	Standard disk stamped TT9 RDM 1959 530, set in concrete, approximately 2.4 miles southwest along State Route 9 from U.S. Route 65 and State Route 9 junction, approximately 41 feet off southeast side of road, 250 feet southwest of County Road 18, SE1/4, Section 15, T.10N., R.14W.
RM26	170	563.31	Chiseled square 20 feet north of center of 2.0 foot concrete culvert, 1.7 feet lower, approximately 3.0 miles southwest along State Route 9 from U.S. Route 65 and 9 junction, 20 feet north of center of State Route 9, NE1/4, Section 21, T.10N., R.14W.
RM27	170	858.18	Chiseled square painted UE 858.0, 0.8 feet lower than center of east headwall of 1.5 foot concrete culvert under State Route 9, approximately 1.0 mile northeast of Van Buren-Conway County line, NW1/4, Section 32, T.10N., R.14W.

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Reference Mark	[illegible]	Elevation (Feet (NGVD)	Description of Location
[illegible]	170	735.2[illegible]	60 D spike in root of 20-inch red oak at center of Baker Lake Road and County Road intersection, approximately 1/4 mile north of East Fork Point [illegible] Creek and County Road bridge, SW1/4, Section 31, T.10N., R14W.
[illegible]	[illegible]	[illegible].65	60 D spike in 28-inch red oak on west side of county road approximately 189 feet south of south end of bridge [illegible] Fork Point Remove and [illegible] SE1/4, Section 36, T.10N., R.[illegible].
[illegible]	[illegible]	[illegible]	Chiseled square painted UE 806.9, at center of southeast headwall of 3-6 by [illegible] feet box culverts under State Route [illegible] at East Fork Point Remove Creek, [illegible]/4, Section 31, T.10N., R.14W.
[illegible]	[illegible]	[illegible]	Chiseled square painted UE 902.1 at center of bottom concrete step of Union Hill Church, 125 feet north of County Liner Road, 50 feet east of N-S fence and gravel road, SW1/4, Section 32 T.10N., R.14W.
RM32	[illegible]	931.52	1/2 inch bolt (no head) painted RM 931.3 in west root of 30-inch tree, approximately 1/4 mile east from Union Hill Church to gravel road, south on gravel road approximately 1/4 mile, 16 feet east of center of road, NE1/4, Section 5, T.9N., R.14W.
RM33	190	1,093.354	Standard disk stamped WWB1941, set in a concrete post, approximately 2.0 miles northeast of U.S. Route 65 along East Mountain Road, 42 feet south and 17 feet east of 90 degree bend in road, SE1/4, Section 20, T.10N., R.13W.
RM34	190	765.81	Chiseled square in center of headwall of box culvert, 25 feet southwest of centerline of U.S. Route 65, 60 feet west of U.S. Route 65 and State Route 92 junction, NE1/4, Section 5, T.9N., R.13W.

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Reference Mark	FIRM Panel	Elevation (Feet (NGVD)	Description of Location
RM35	190	727.02	Boat spike in 8" elm, 200 feet east of Scroggins Creek on south right-of-way of State Route 92, SE1/4, Section 4, T.9N., R.13W.
RM36	190	771.18	Chiseled square in center of southwest headwall of 6 by 5 foot concrete box culvert, approximately 0.4 mile southeast of U.S. Route 65 and State Route 92 junction along U.S. Route 65, SE1/4, Section 5, T.9N., R13W.
RM37	195	784.26	Boat spike in power pole, 2 miles northeast along Hunter Road from Pine Mountain Church, 20 feet south of centerline of road, NE1/4, NW1/4, Section 11, T.9N., R.13W.
RM38	*	734.920	Standard disk stamped Q125 1935, set in top of concrete post approximately 1.0 mile northeast along Alread Road from junction of State Route 95 at Scotland, about 200 feet northeast of northeast corner of Mrs. R. C. Hall farmhouse, 35 feet north of centerline of road, 26 feet northwest of southwest fence corner, 12 feet west of 24-inch oak tree, 1 foot south of wire fence, SW1/4, Section 5, T.10N., R.15W.
RM39	250	781.20	Chiseled square in center of east headwall of 3 by 6 foot concrete box culvert, 16 feet east of centerline of U.S. Route 65, approximately 1,200 feet north of intersection of U.S. Route 65 and an east-west road leading to Southside School. SW1/4, NW1/4, Section 9, T.9N., R.13W.
RM40	250	814.40	Boat spike in power pole approximately 1.1 miles northwest of Pine Mountain Church, in southeast corner of junction of Gravesville Cutoff and gravel road, SE1/4, Section 9, T.9N., R.13W.
RM41	250	782.49	Boat spike in east side of power pole, approximately 20 feet west of centerline of Gravesville Cutoff, 150 feet southeast of Pine Mountain Church, SE1/4, NW1/4, Section 15, T.9N., R.13W.

*Located outside county boundary

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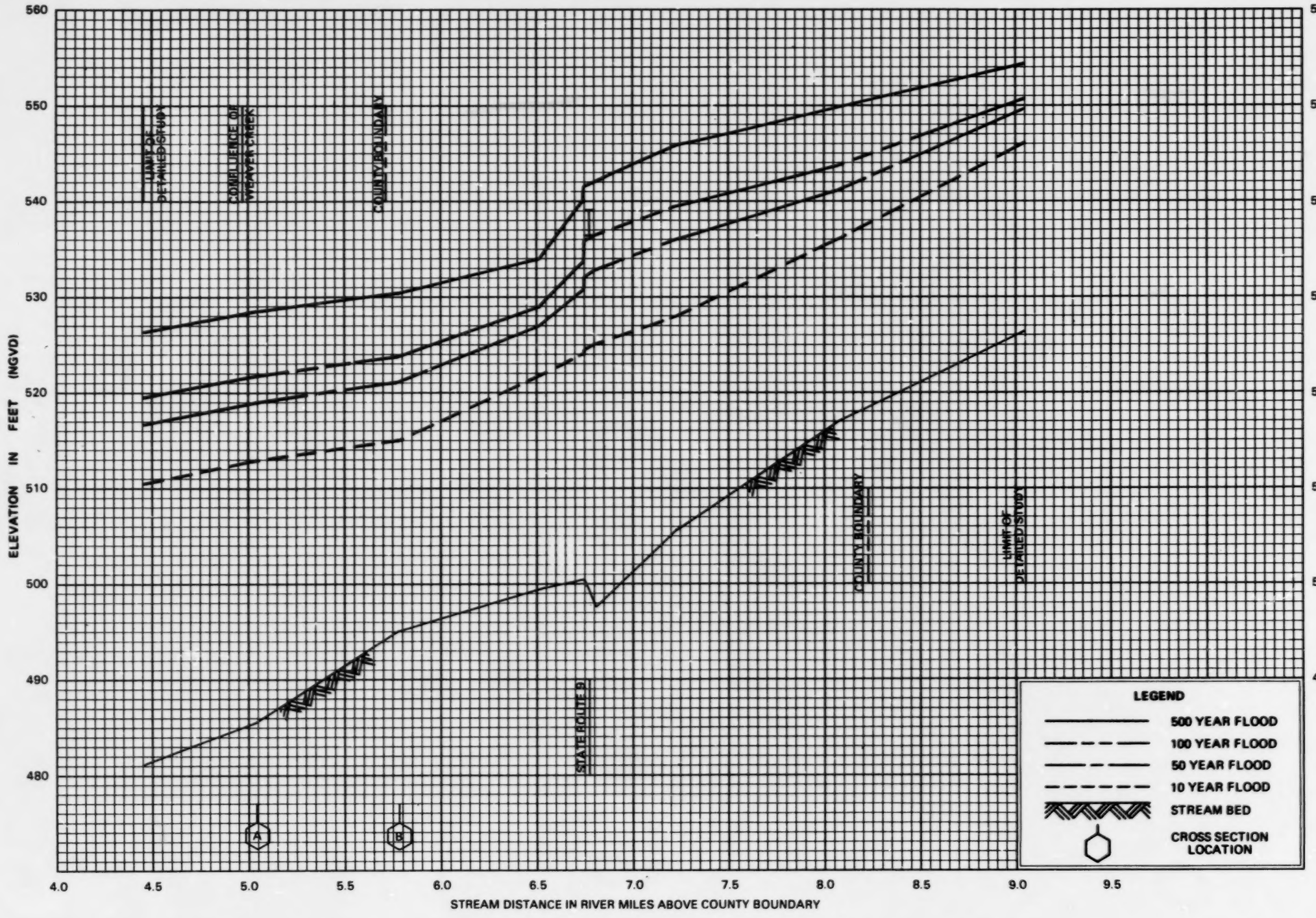

FLOOD PROFILES

MIDDLE FORK LITTLE RED RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR
(UNINCORPORATED AREAS)

01P

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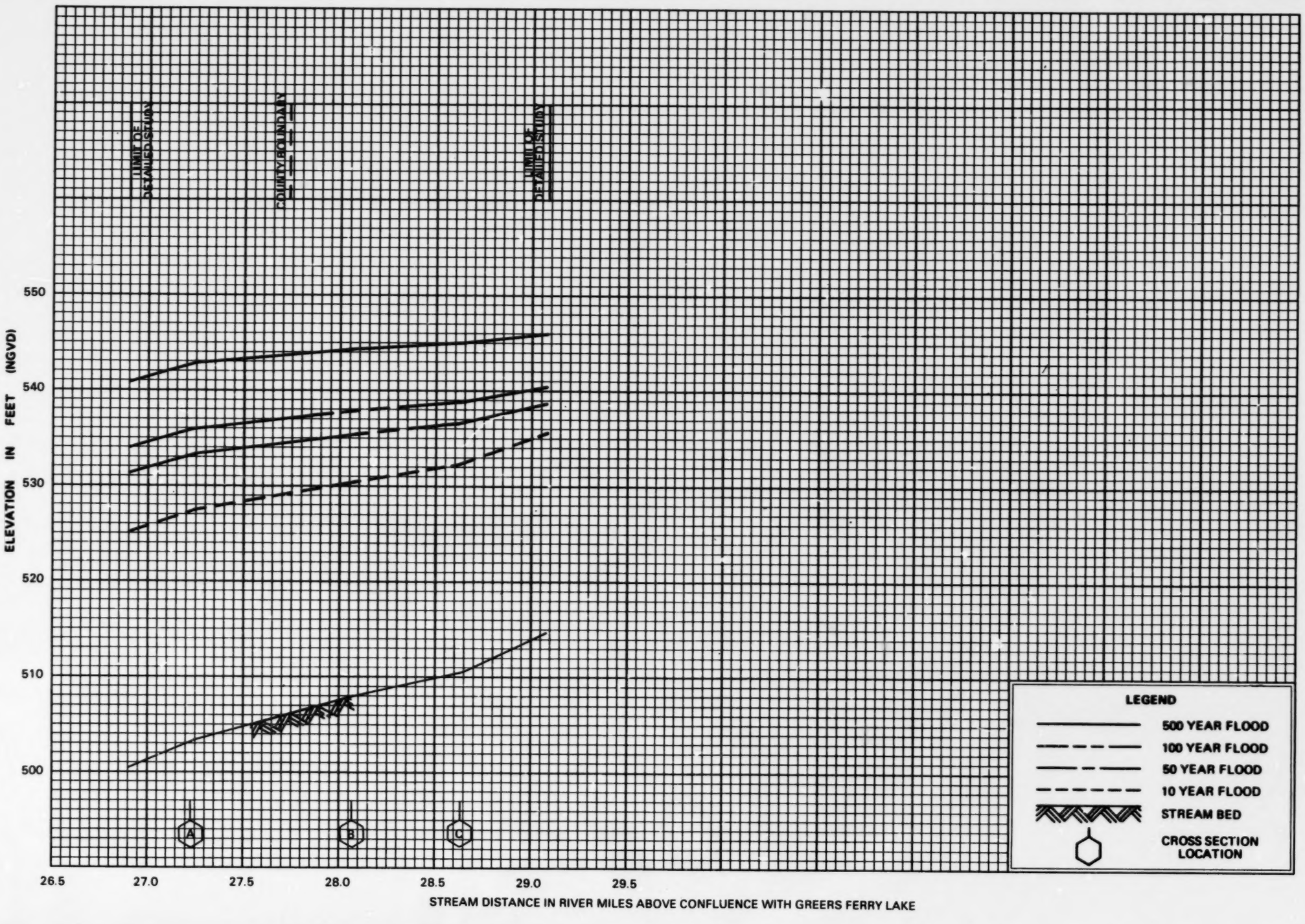

FLOOD PROFILES

SOUTH FORK LITTLE RED RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

02P

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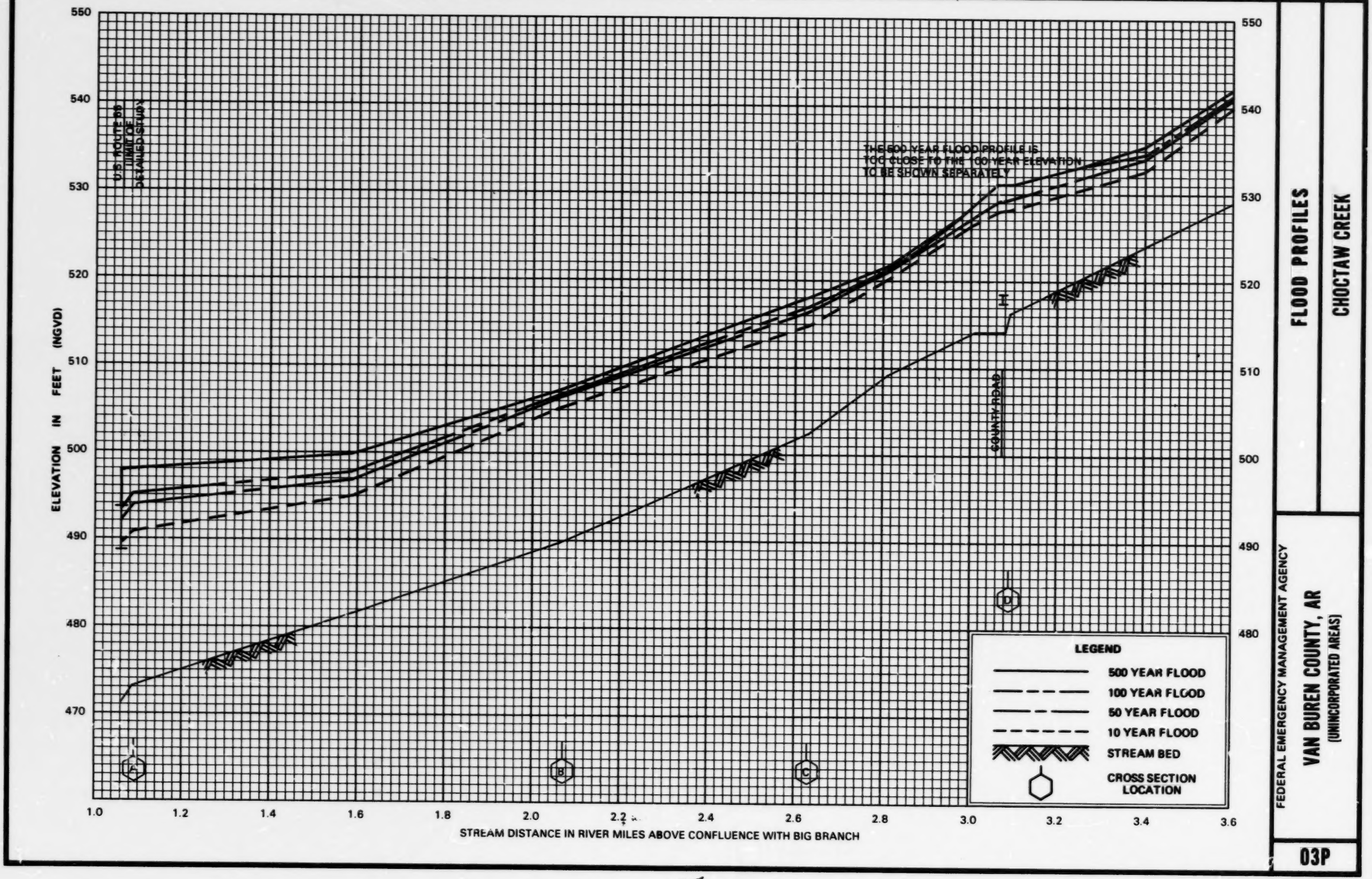

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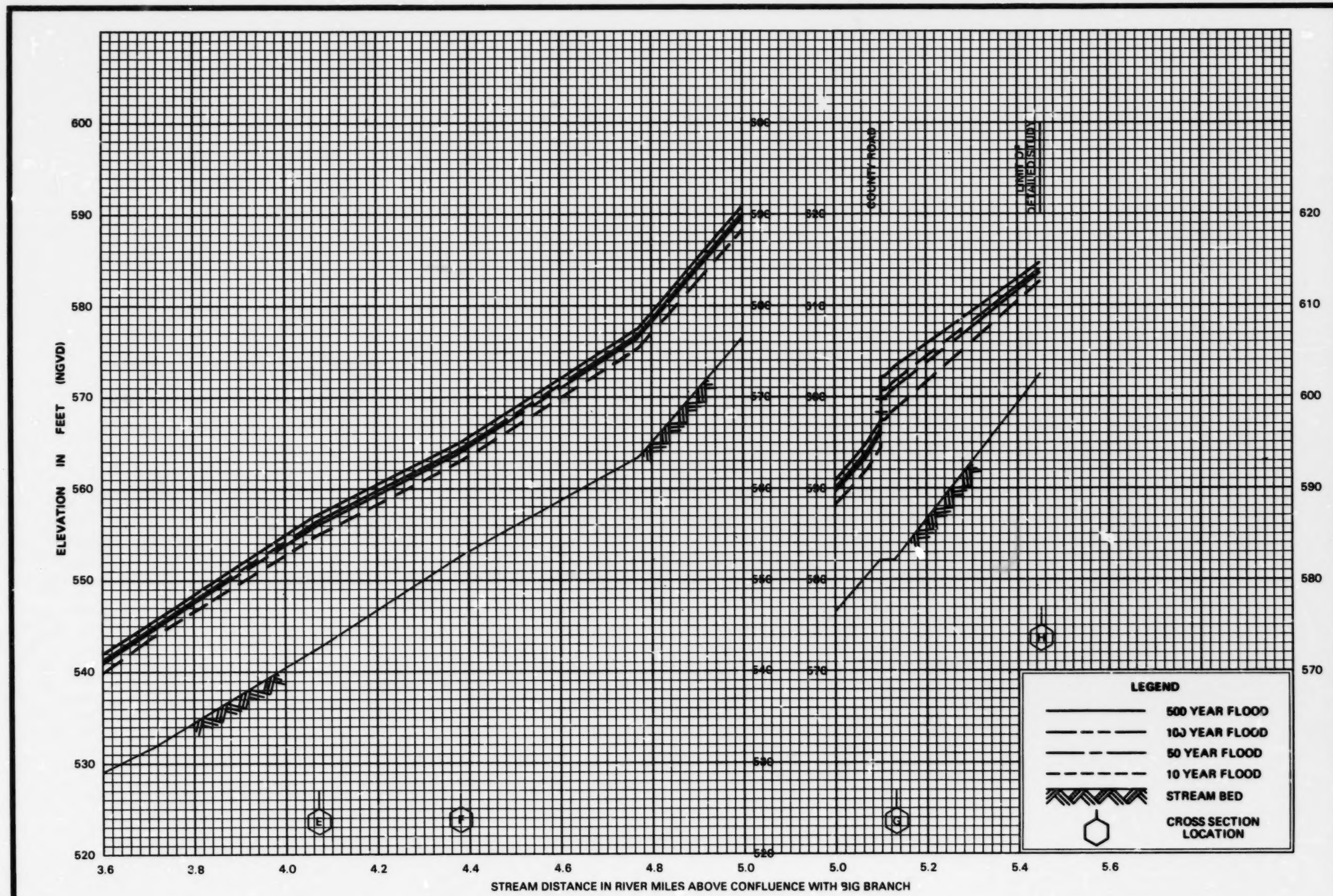

FLOOD PROFILES

CHOCTAW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

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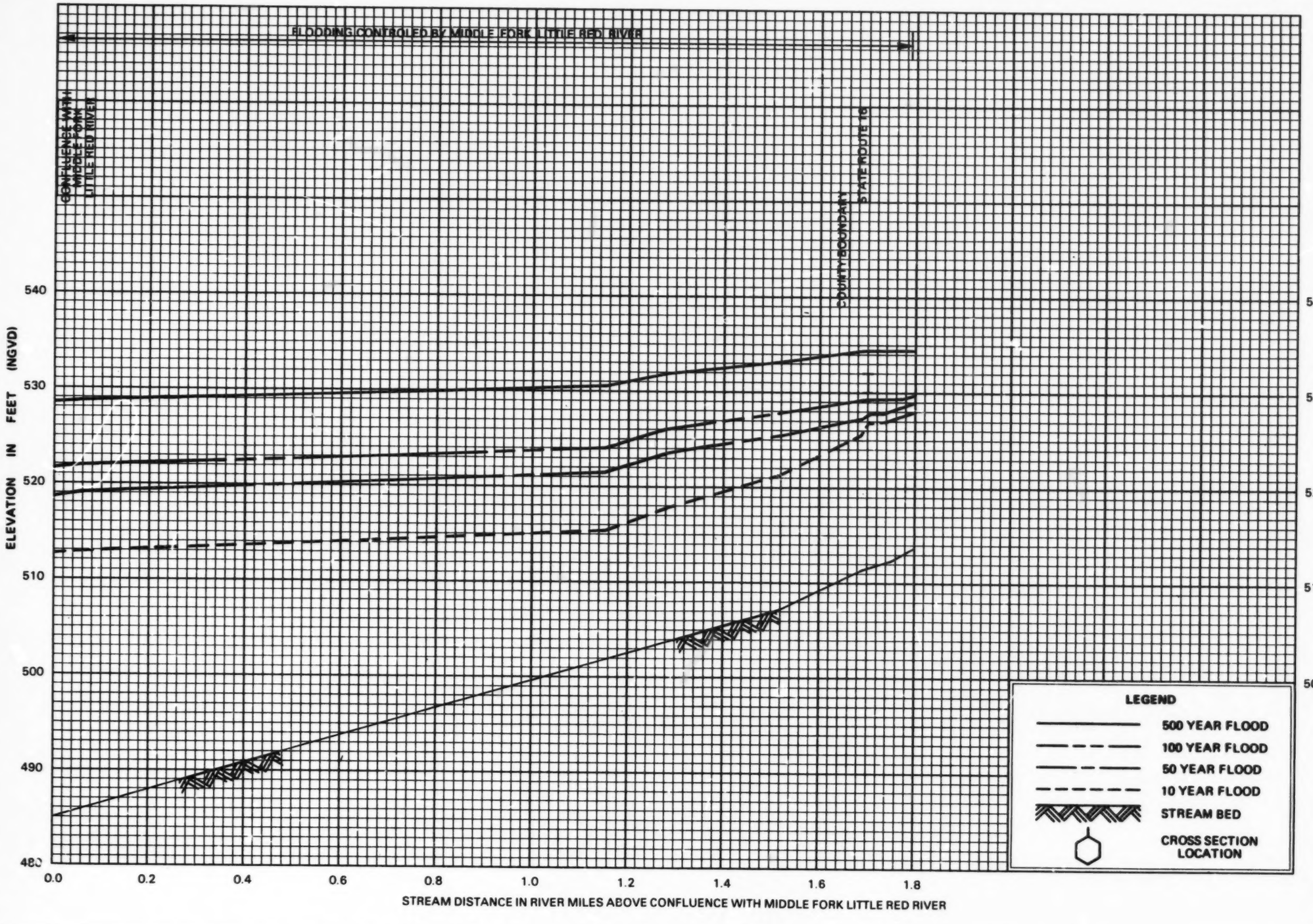

FLOOD PROFILES

WEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

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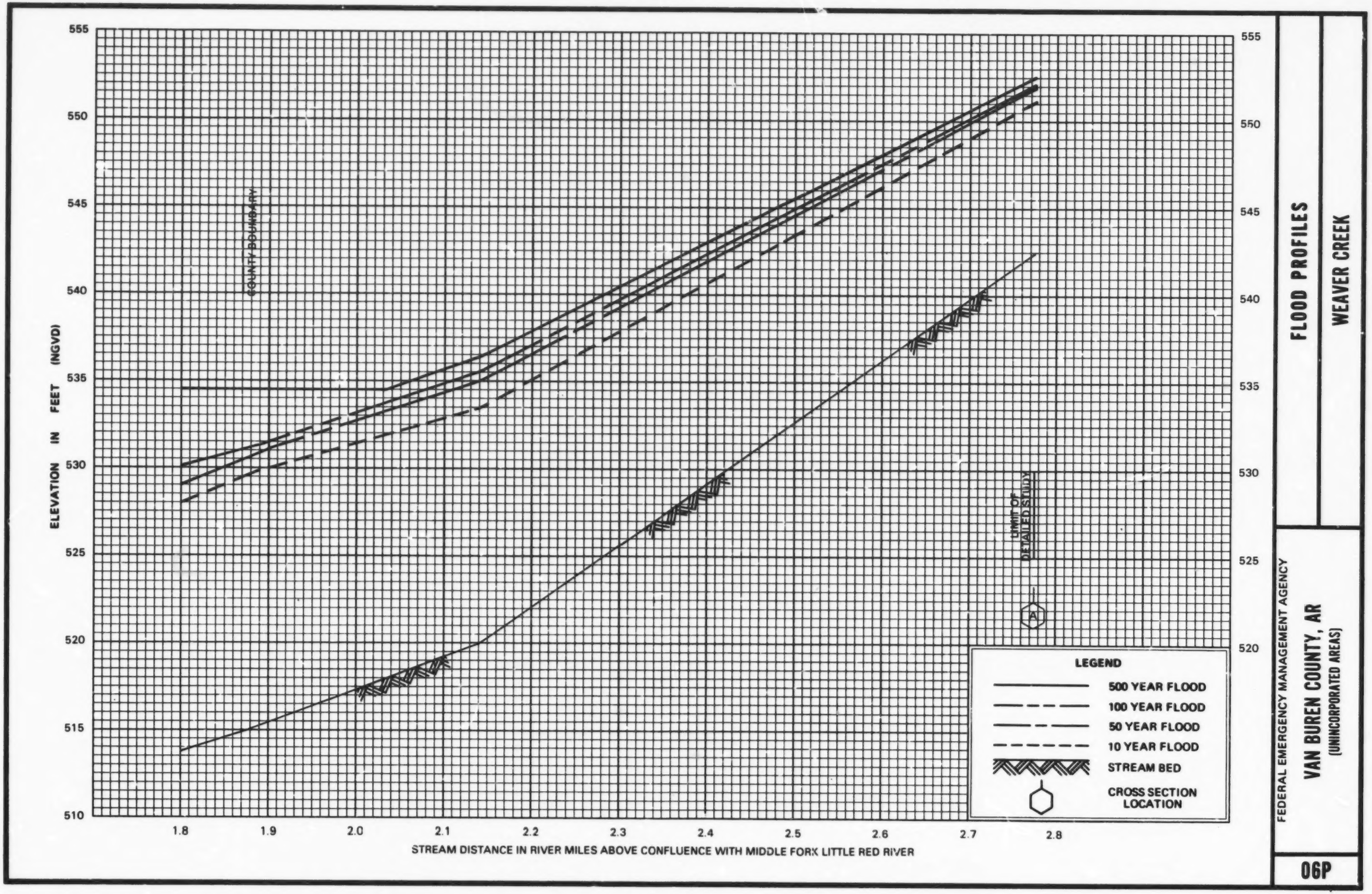

FLOOD PROFILES

WEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

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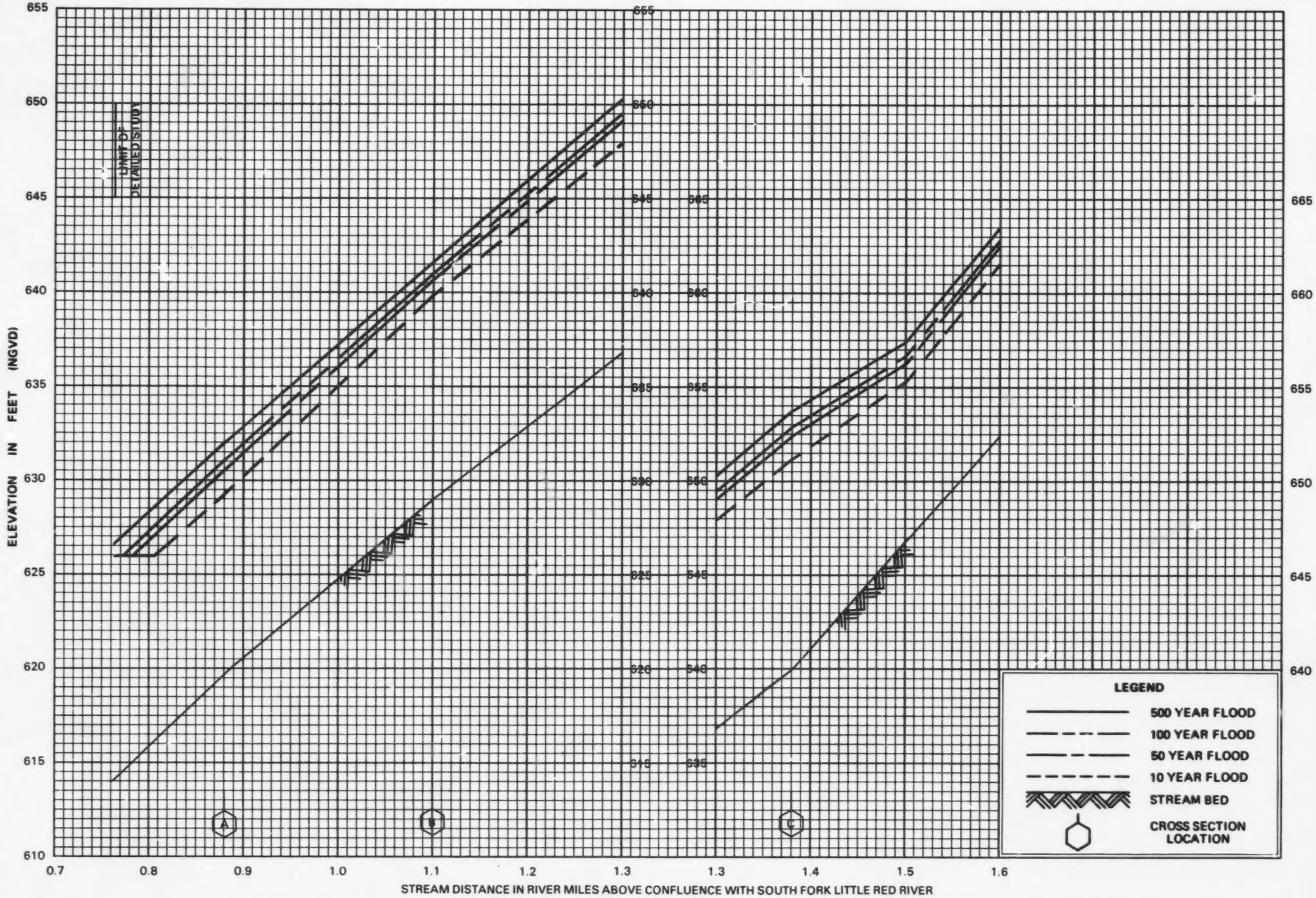

FLOOD PROFILES

SCOTLAND BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

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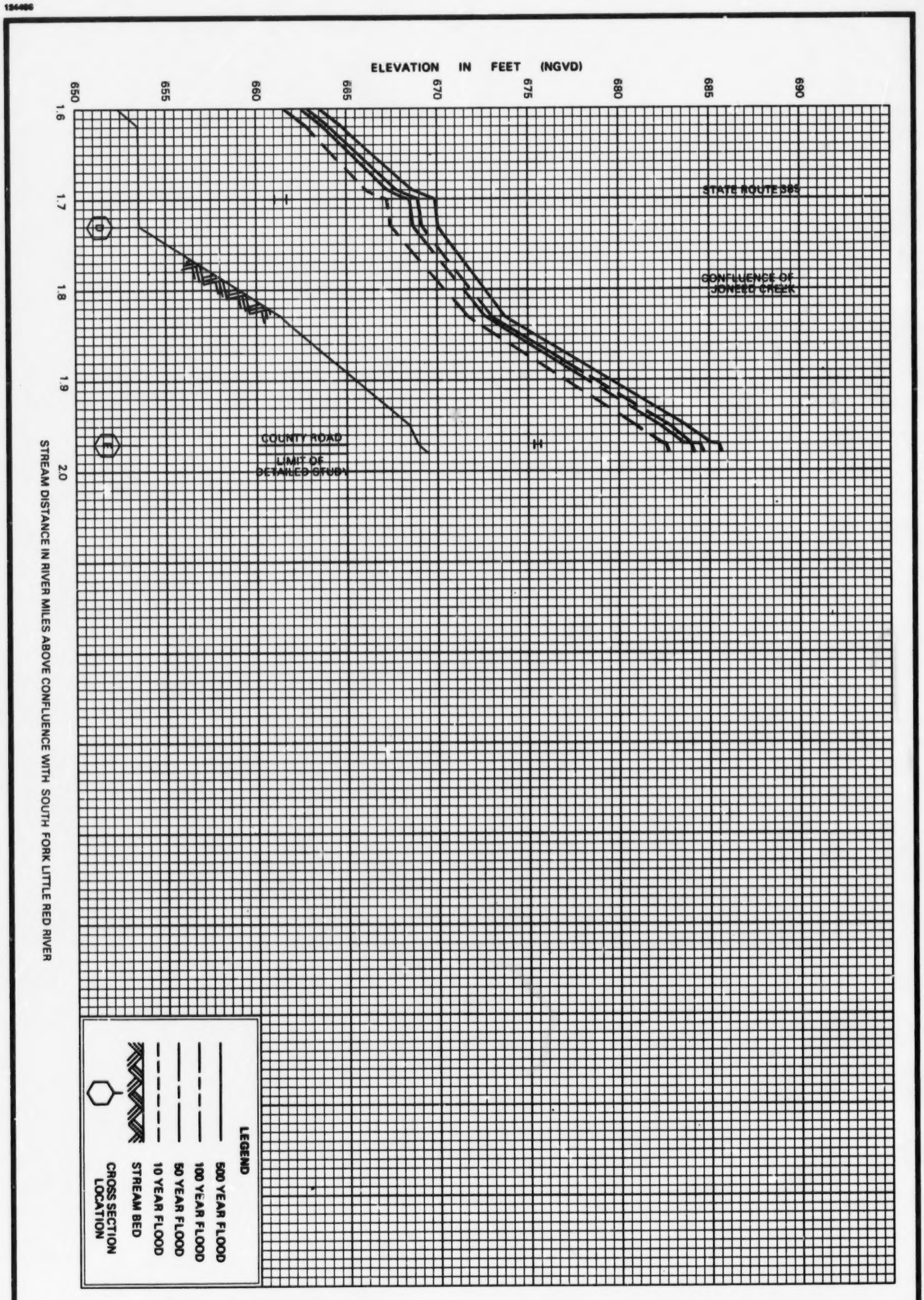

08P	FEDERAL EMERGENCY MANAGEMENT AGENCY VAN BUREN COUNTY, AR (UNINCORPORATED AREAS)	FLOOD PROFILES SCOTLAND BRANCH

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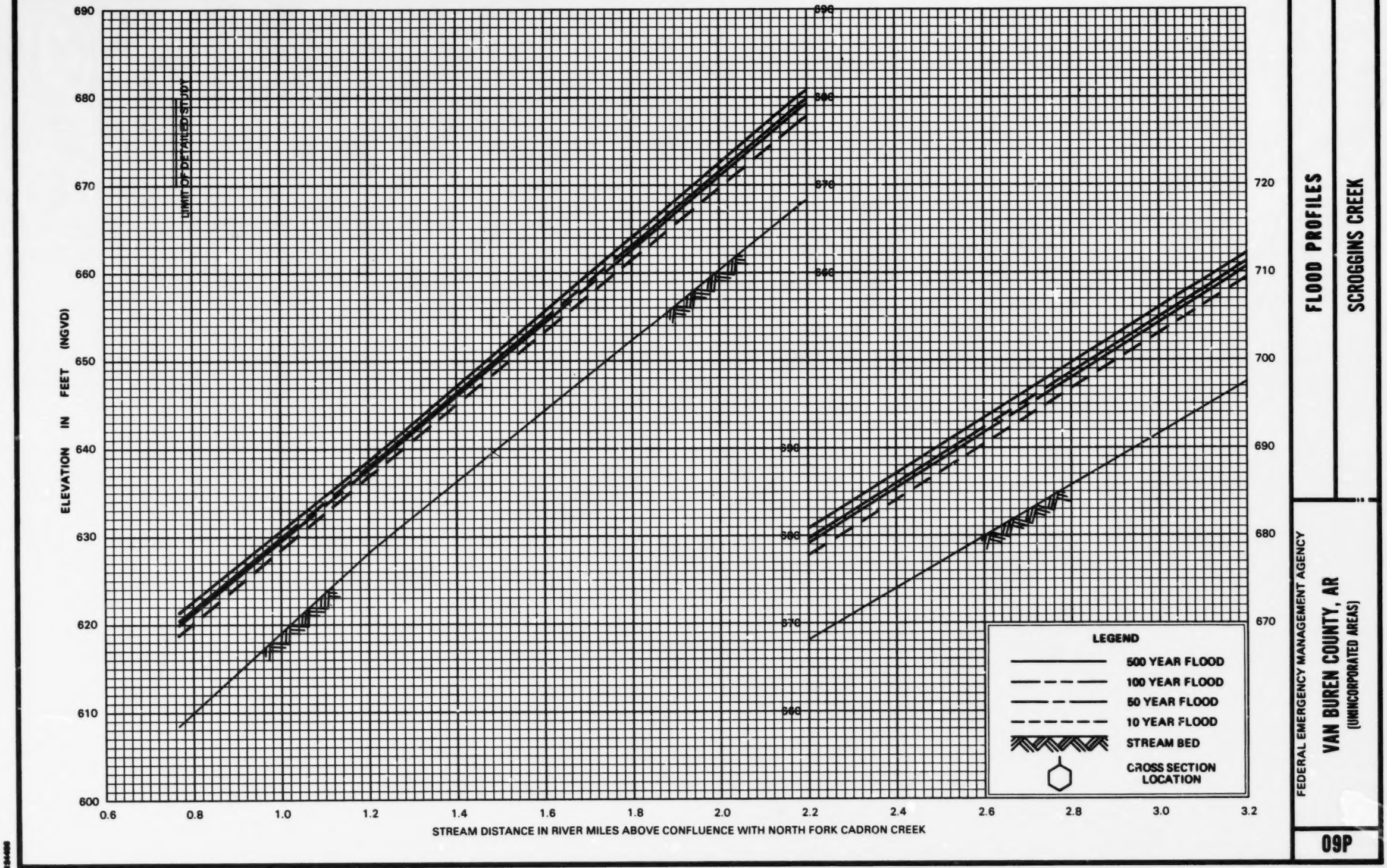

FLOOD PROFILES

SCROGGINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

09P

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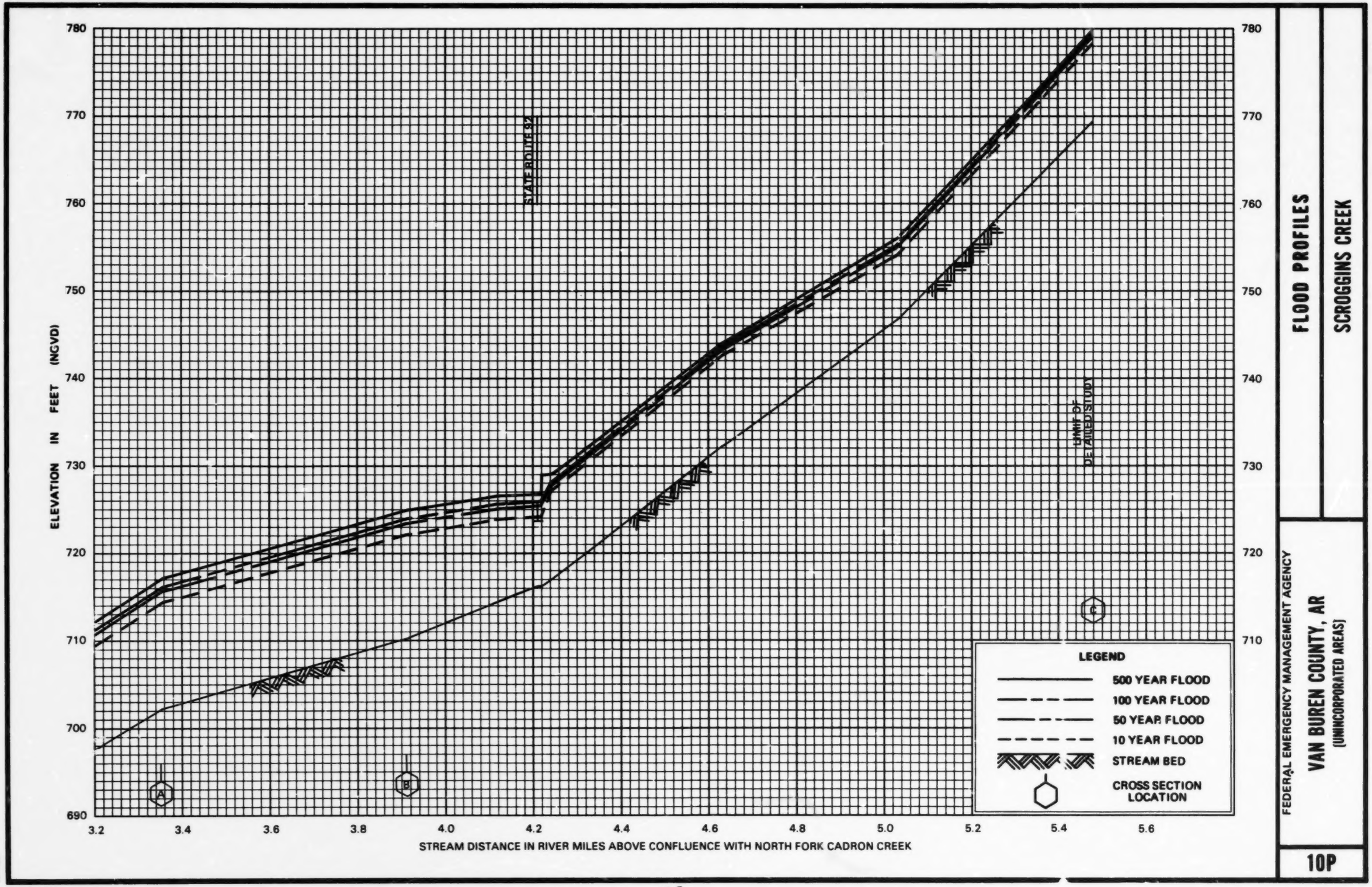

FLOOD PROFILES

SCROGGINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

10P

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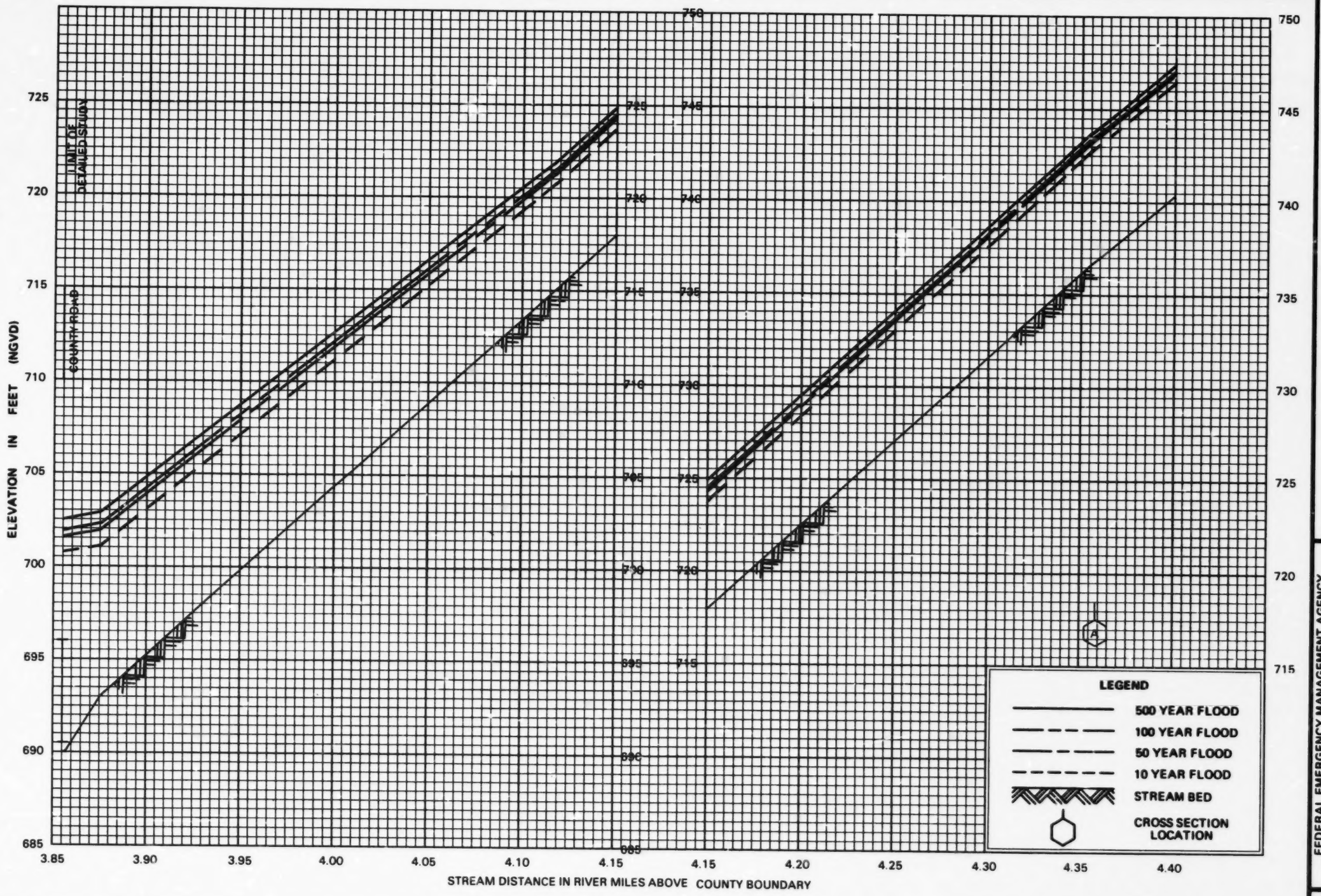

FLOOD PROFILES

EAST FORK POINT REMOVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

11P

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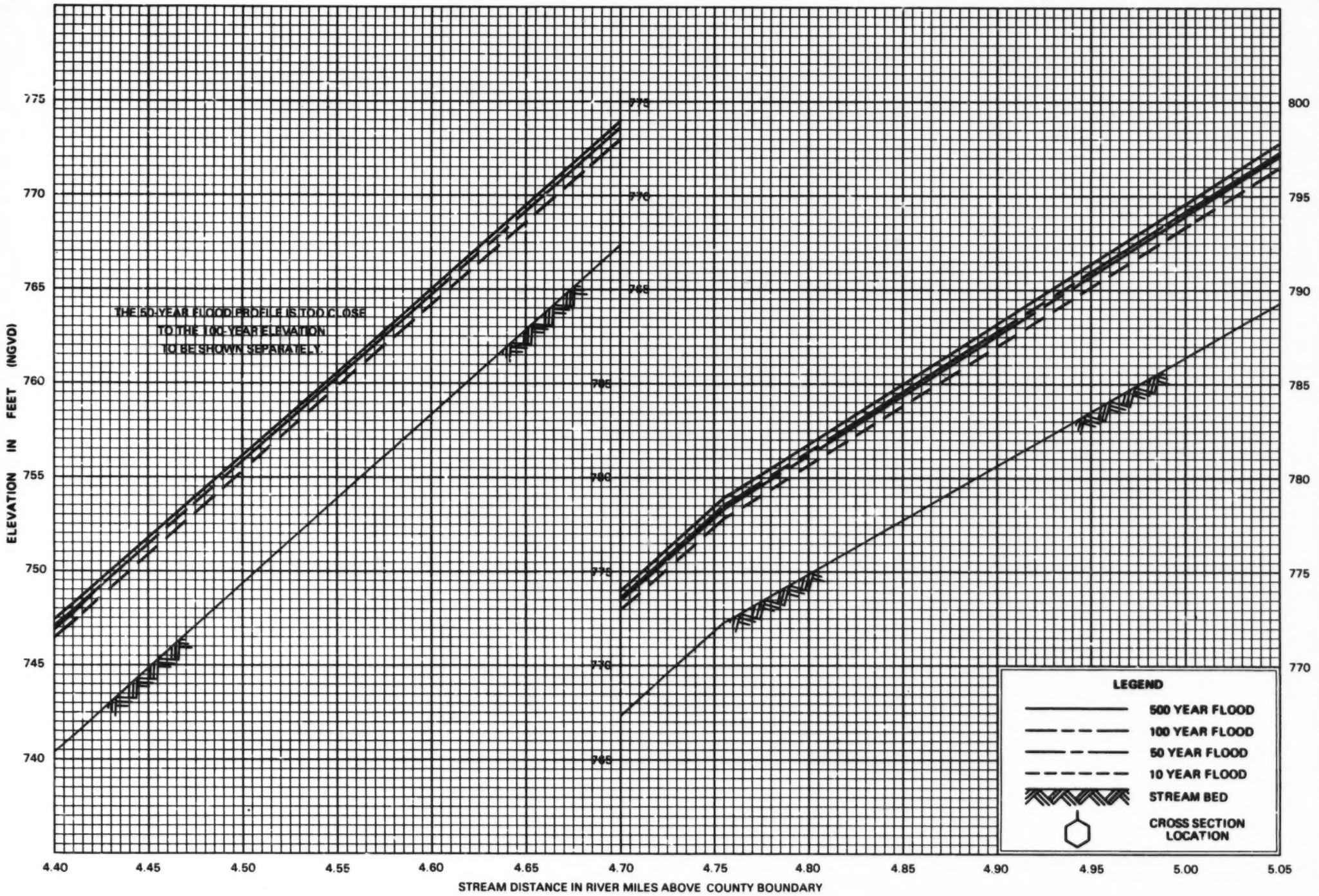

FLOOD PROFILES

EAST FORK POINT REMOVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR
(UNINCORPORATED AREAS)

12P

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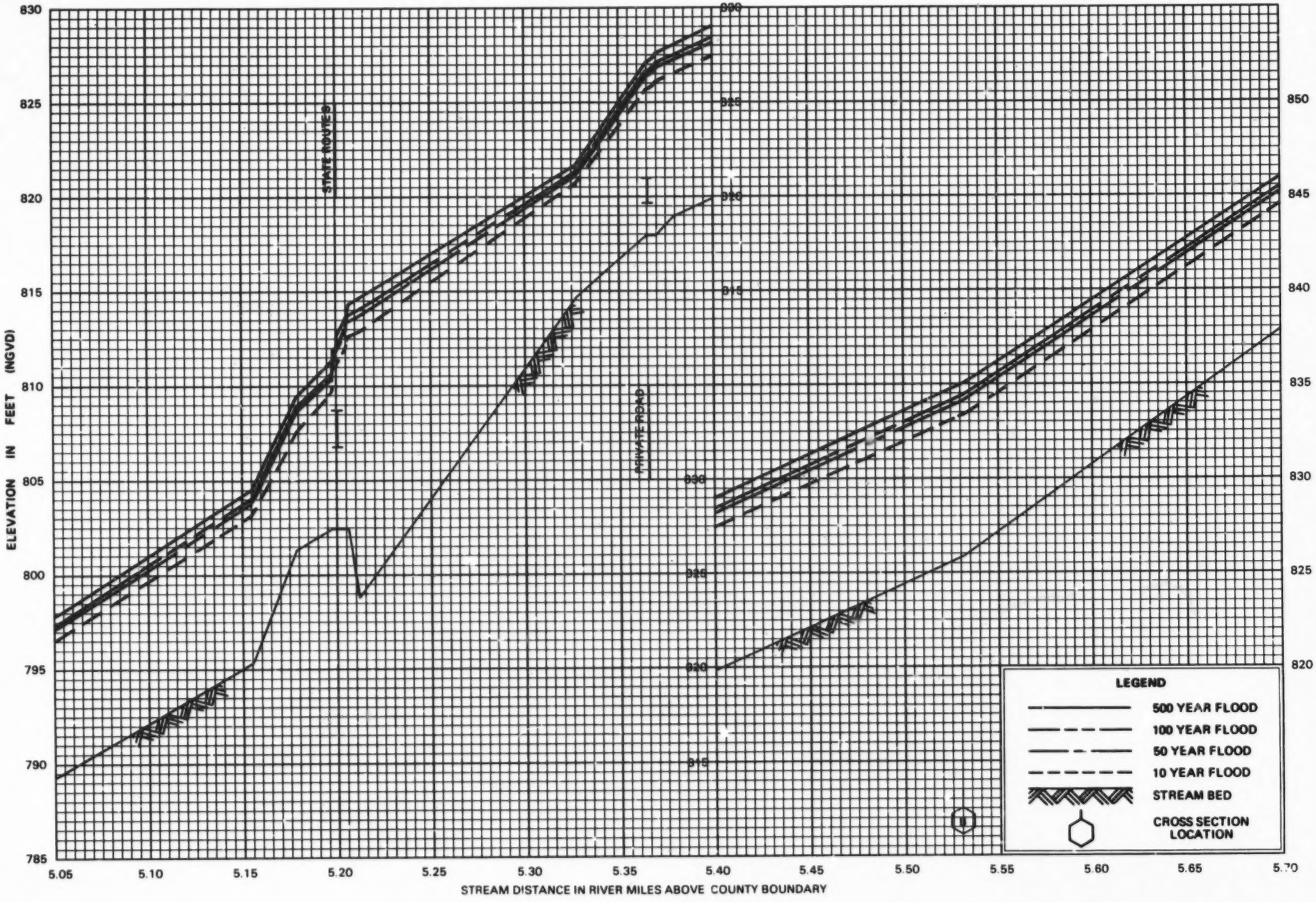

FLOOD PROFILES

EAST FORK POINT REMOVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

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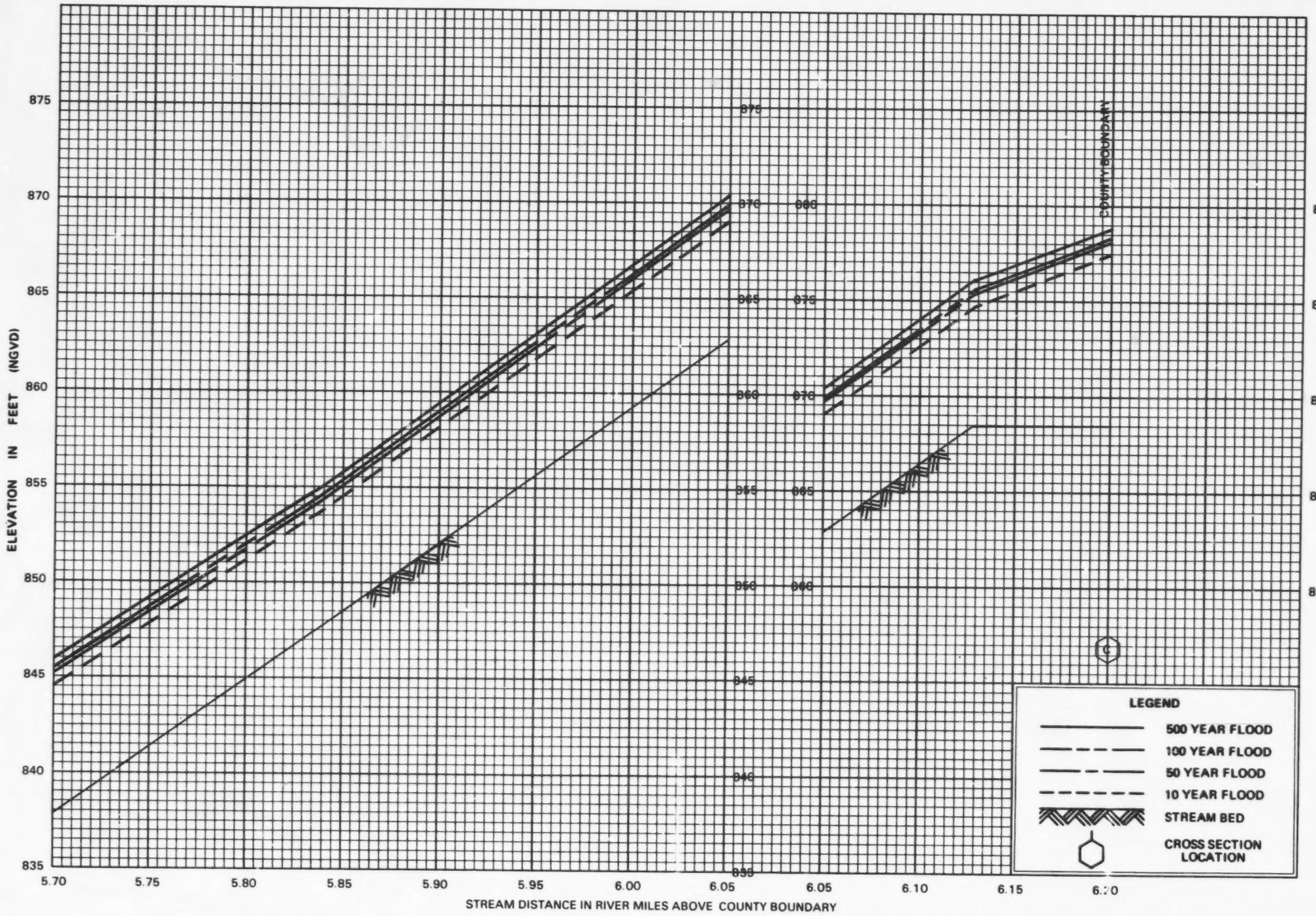

FLOOD PROFILES

EAST FORK POINT REMOVE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

14P

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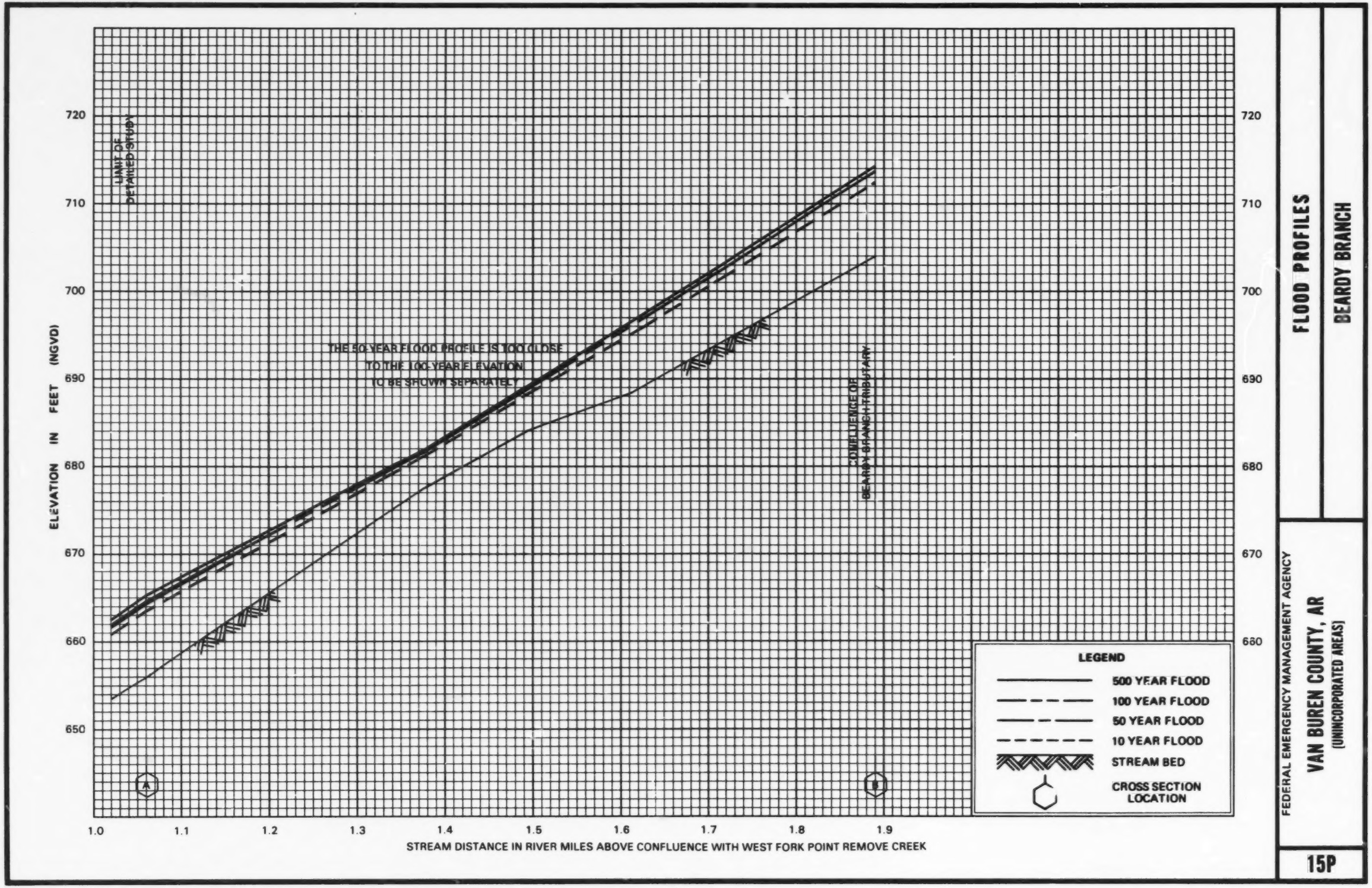

FLOOD PROFILES

BEARDY BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

15P

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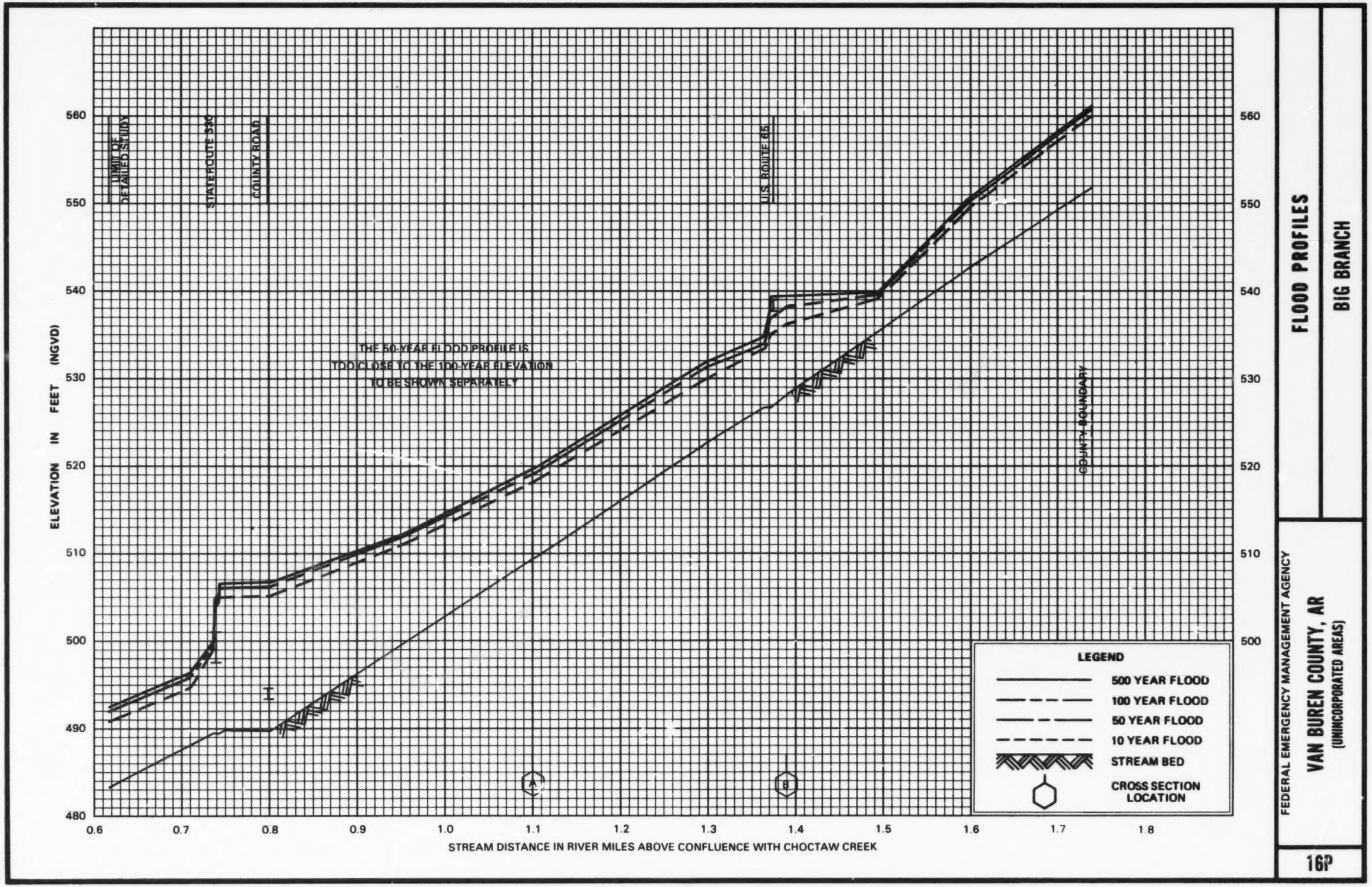

FLOOD PROFILES

BIG BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

16P

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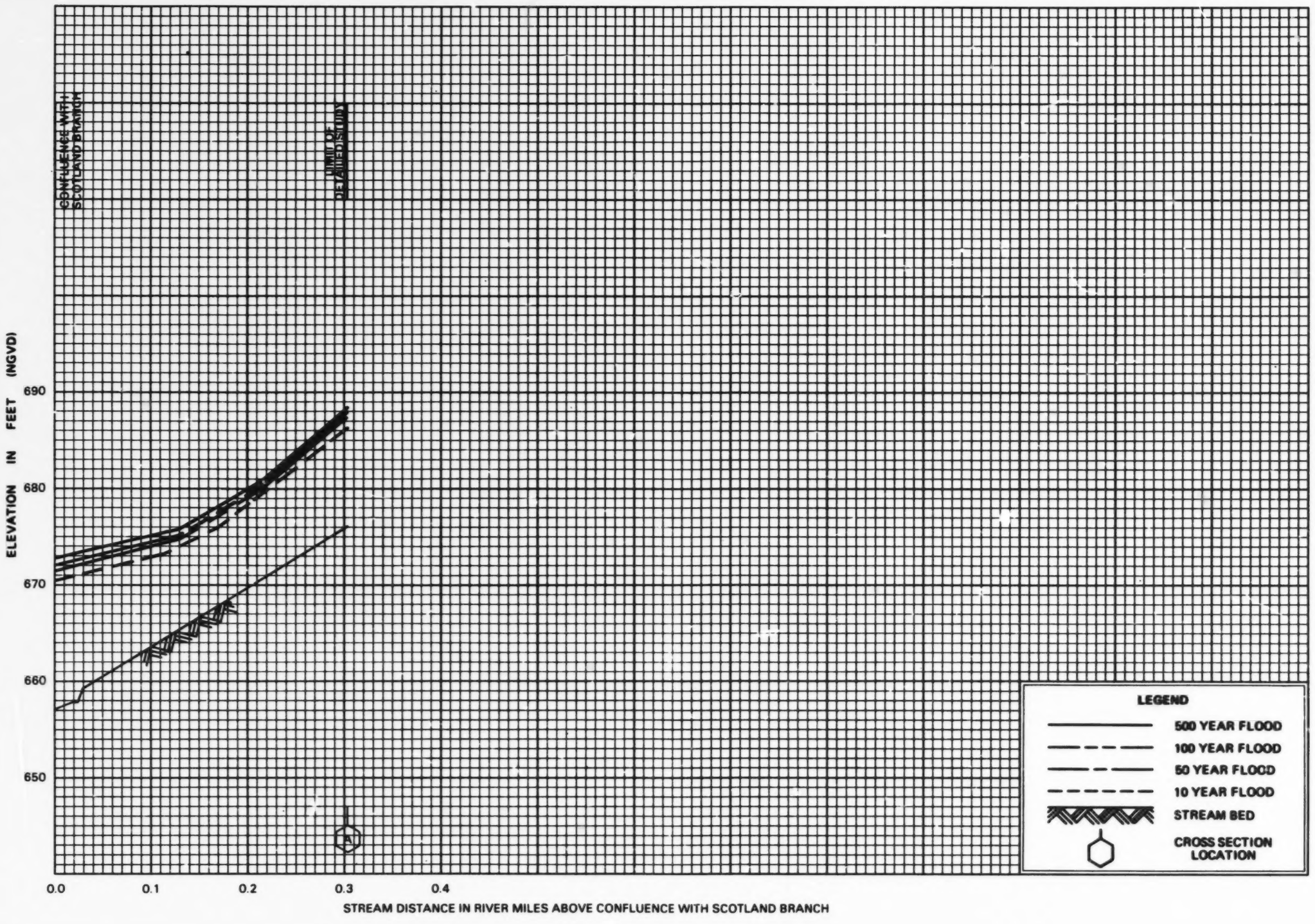

FLOOD PROFILES

JONEED CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

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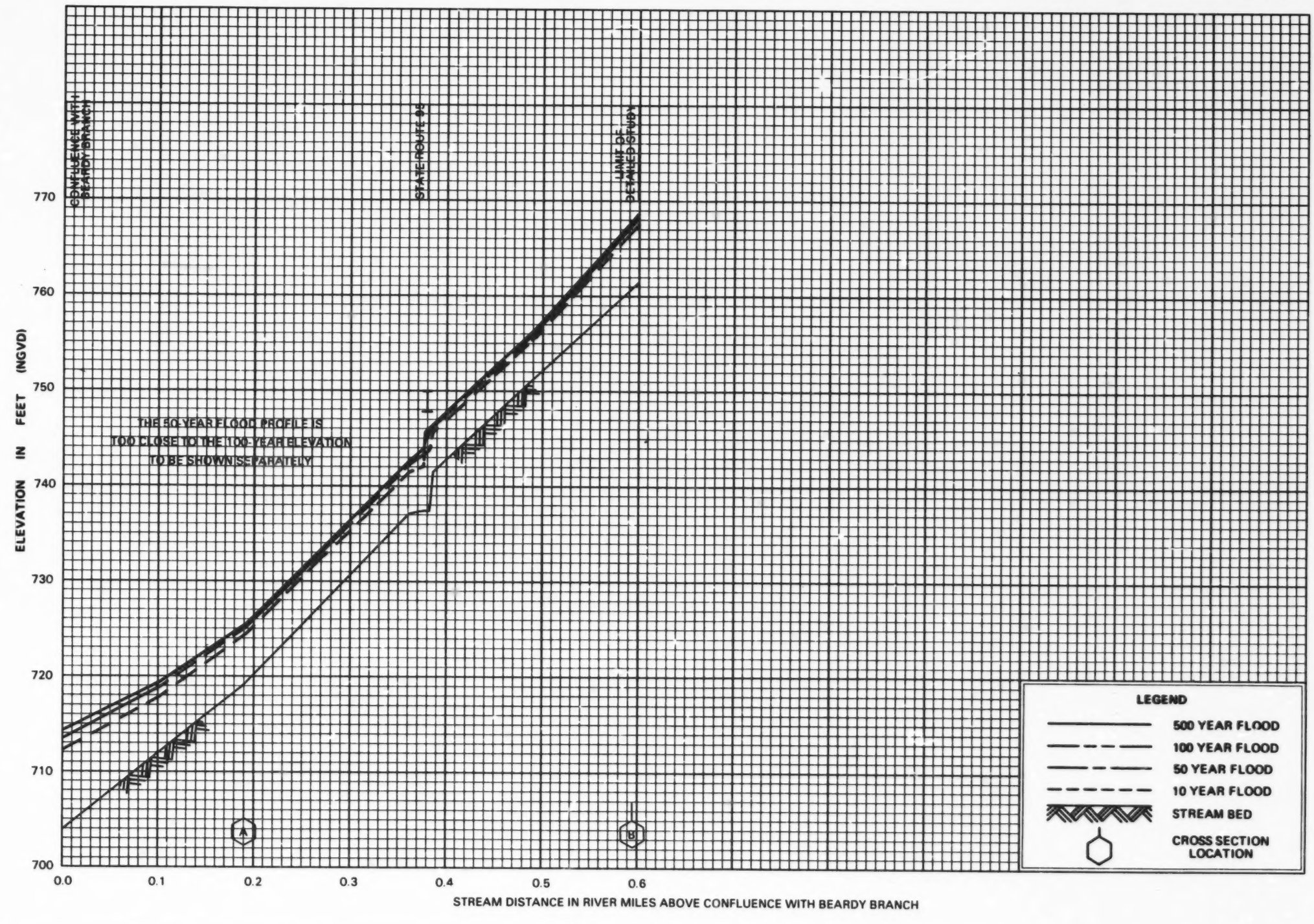

FLOOD PROFILES

BEARDY BRANCH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VAN BUREN COUNTY, AR

(UNINCORPORATED AREAS)

18P

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